

REMARKS/ARGUMENTS

Reconsideration and withdrawal of the outstanding grounds of objection and/or rejection are respectfully requested in light of the above amendments and the remarks that follow.

The Examiner has objected to the drawings based on the utilization of reference numeral 72 for two separate items, i.e., the photomultiplier tube and the axially extending radial springs.

Applicant has attached hereto a proposed amendment to Figure 2 that would use reference numeral 73 for designating the axially extending radial springs. The specification has also been amended to reflect the change.

The Examiner has also objected to the Abstract of the Disclosure, the Examiner suggesting that "12A" in line 1 should be "A."

The application as originally filed does not contain "12A" in line 1 of the abstract. The discrepancy may have appeared in the electronic filing of the application. In any event, applicant has attached to this amendment a substitute abstract. In the alternative, the Examiner is authorized to amend the original abstract by Examiner's Amendment to remove the numeral "12."

The Examiner has objected to the use of the trademarks "TEFLON®," "KAPTON®" and "SYLGARD®" absent accompanying generic terminology.

Applicant has amended the application to acknowledge the registered status of the marks, and to use the appropriate generic terminology in every instance where the trademarks have been used.

The Examiner has rejected claims 1 and 3-5 under 35 U.S.C. 102 as anticipated by McKay (U.S. 3,240,937).

Claim 1 has been amended to require that the cylindrical crystal element be hermetically sealed within the cylindrical housing. In addition, the claim now requires that the cylindrical crystal element be wrapped with reflective tape and a polyamide layer so that the gadolinium foil is located radially between the polyamide layer and the housing. Finally, the claim has been amended to specify that in use, the gadolinium foil excludes thermal neutrons from the crystal element.

In McKay, the luminophor or crystal 27 is mounted within a container 31 that is, in turn, provided with a thin layer 32 of a neutron-absorbing material which, as disclosed in column 6 of the reference may be gadolinium. It is apparent that the luminophor 27 is not hermetically sealed within a substantially cylindrical housing. Rather, the luminophor 27 is located within a container or flask that is closed only by a cork plug 35. Since a cork plug does not provide a hermetic seal, the claim distinguishes over McKay. In addition, it is also apparent that McKay does not utilize the neutron-absorbing material 32 for the purpose of stopping all neutrons from activating the iodine in the scintillation crystal but rather, to compensate for the change in neutron flux when the down-hole concentration of chlorine changes. The current and commonplace use of down-hole,

multi-channel analyzers, developed since the filing of the McKay patent, makes this approach to chlorine cancellation unnecessary. However, the need to prevent iodine activation still persists because the energy release of the iodine cannot be localized in energy. Thus, McKay also fails to meet the requirement in claim 1 that in use, the gadolinium foil excludes thermal neutrons from the crystal element. Accordingly, claim 1 as well as claims 3-5 that depend therefrom, patentably define over McKay.

The Examiner has rejected claims 2 and 6-19 under 35 U.S.C. 103 as unpatentable over McKay in view of Frederick (U.S. 5,962,855).

For claim 2, the Examiner regards Frederick as teaching a crystal element with a conical forward portion and contends that it would have been obvious to modify McKay to provide a conical forward portion on the luminophor 27.

Since Frederick fails to remedy the deficiencies of McKay with respect to independent claim 1, claim 2 is patentable by reason of its dependence upon claim 1.

Applicant has cancelled claims 6-8, rendering the rejection moot as to these claims.

With regard to independent claim 9, the Examiner relies on Frederick for teaching a radial and axial support assembly that includes a radially inner sleeve comprised of a polyamide, a grease layer and a radially outer sleeve comprised of stainless steel. The Examiner contends that it would have been obvious to one of ordinary skill in the art to incorporate the gadolinium foil of McKay within a stainless steel sleeve as part of a radial and axial support assembly as taught by Frederick.

It is significant that the Examiner has simply concluded, without supporting evidence, that it would have been obvious to incorporate a gadolinium foil between the polyamide and stainless steel layers of the radial and axial support assembly disclosed in Frederick. There is, of course, no such suggestion in Frederick. Moreover, the gadolinium foil is used in McKay to compensate for the change in neutron flux when the down-hole concentration of chlorine changes, a function that is not of concern in Frederick. Moreover, there is nothing in McKay that would suggest the need for a radial and axial support assembly of the type disclosed in Frederick and, more significantly, there is no teaching in either reference to locate the gadolinium foil precisely within such a support assembly as asserted by the Examiner. In other words, the rationale employed by the Examiner in rejecting claims 2 and 6-19 is clearly based on the utilization of impermissible hindsight gained only from applicant's own disclosure and as such, the rejection is improper.

Dependent claims 10-12, 14 and 15 are patentable by reason of their dependence upon claim 9.

With respect to dependent claims 16-19, here again, the proposed combination is based upon the utilization of impermissible hindsight. Nowhere in either reference is there any suggestion that a gadolinium foil be incorporated within a radial and axial support assembly of the type claimed.

It is respectfully submitted that all of the remaining claims are in condition for immediate allowance, and early passage to issue is requested. In the event, however, any

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small matters remain outstanding, the Examiner is encouraged to telephone the undersigned so that the prosecution of this application can be expeditiously concluded.

Respectfully submitted,

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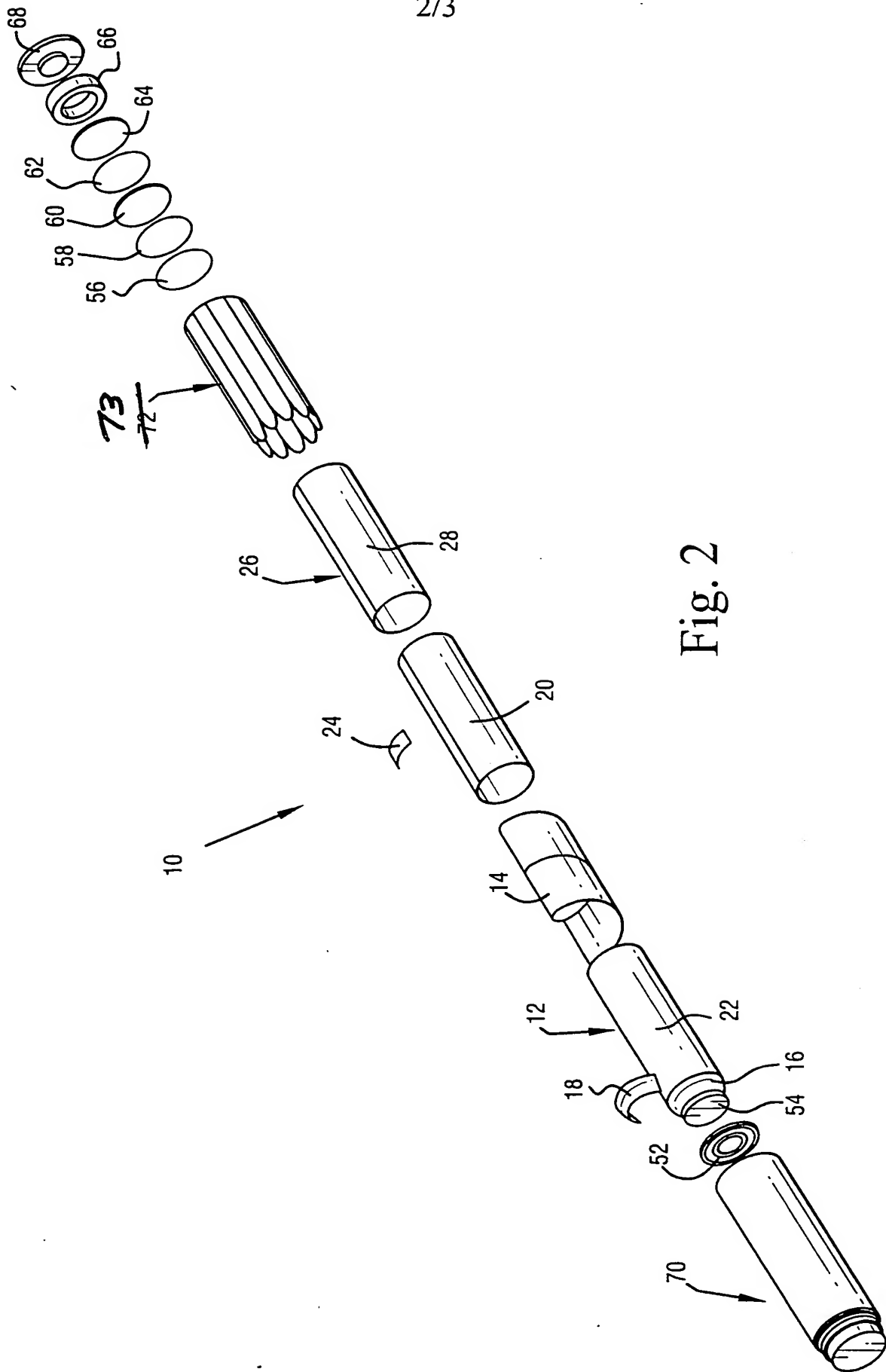


Fig. 2